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ABSTRACT

The key way for government to legislate the scientific revolution is to know when science threatens to ethically destroy the fabric of society. The U.S. President has asked you (the student), his senior advisor, to test the waters of this new science and evaluate what stance he needs to take regarding issues like cloning, cryogenics, assisted suicide, etc. To stay in office, the President must define his beliefs and find a way to mesh them with those of the public. This lesson plan calls for the student (the senior advisor) and his staff (group) to gather the scientific information necessary to advise the President, taking into account scientists like Galileo and Edward Jenner, both viewed initially with skepticism, but winning out against considerable odds. The lesson plan suggests a focus on five questions relating to Galileo and Jenner. It describes the process; lists resources; gives learning advice; considers evaluation; and provides concluding questions. The teacher notes section gives a grade level and a lesson purpose; addresses history/social science and language arts standards; and suggests length of lesson and adaptations for special needs students. (BT)

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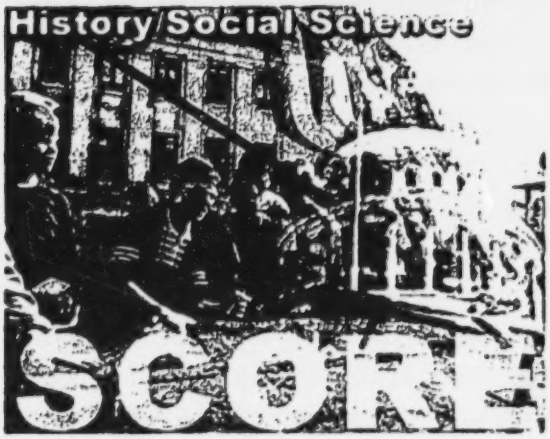

Schools of California Online Resources for Education (SCORE): Connecting California's Classrooms to the World

The Price to be Paid for the Next Scientific Revolution

SO 034 253

7th Grade Activity by David R. MacDonald

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The Price to Be Paid For the Next Scientific Revolution

As we close the 21st century, science is rushing headlong into the future and the brakes seem unable to bring it to a stop. In the past, a senior advisor to the President of the United States spent most of his days keeping the President abreast of economic and domestic policy. Today, however, it has become apparent that we are truly heading into a new Scientific Revolution, where there are people who believe that the saying "In God We Trust," means to trust in themselves. The key way to legislate the Scientific Revolution seems to be to know when science steps over the line and threatens to ethically destroy the fabric of our society.

The President has asked you to test the waters of this new science and evaluate what stance he needs to take regarding issues like cloning, cryogenics, assisted suicide, etc... In order to stay in office, the President knows that he must define his beliefs and find a way to mesh them with those of the public. It was suggested that you research the first Scientific Revolution of the past, and examine the people, the issues they dealt with, and the eventual outcomes of the scientists during that period. Once you have been able to gather some background, you need to put together a plan for the President to follow regarding the pressing scientific issues of today. Doing a good job on this issue will not guarantee a great future for the President, but doing a bad job will

certainly doom it.

The Task

As a Senior Advisor, you have the staff and resources available to gather information necessary to advise the President. As you look at the past, try and focus on scientists like Galileo and Edward Jenner, as both were viewed initially with skepticism and yet won out against considerable odds. You will help your research along by focusing your work on these questions:

- Did the scientists of the past act ethically as they pursued their goals?
- What were some of the risks undertaken by early scientists?
- What was the societal climate like for early scientists?
- Did the idea of ethics play a role in their scientific discoveries?
- In the process of trying to save lives, was the work of scientists like Jenner ethical?

Once you have established an understanding of the early scientific work, you need to apply what you have learned about the past to modern science, and the future of science. Remember it is your job to provide a path for the President to follow, so that he can feel confident in taking sides in an issue conscious society.

The Process

When you and your group work on this project it is important to remember that you will be forming presidential opinions, as he does not have the time available to study every issue that besets the office of the President. You will be preparing both a written and an oral report to the President, so you need to make sure that you are thorough in all that you do. You and your team have the opportunity to set the course of the United States for the foreseeable future and it is a job not to be taken lightly. Within both your oral and written reports you need to provide options for the President and the possible benefits and consequences that each will bring about. It is a brave new world when it comes

to science, and the U.S. is, and should remain, at the forefront.

Resources

Renaissance to the 20th Century (Scientific Discoveries)

http://www.hsd.uvic.ca:8080/HIS/programs/s97cours/h270/rmatting/ren_pres.h

Edward Jenner's Crime

http://www.mcn.net/~jimloy/jenner.html

Cloning and Much More!

http://www.biospace.com/b2/whats_new/dolly.cfm

Article on Assisted Suicide

http://detnews.com/EDITPAGE/THU810/SNOW810.html

Congressional Consideration of Assisted Suicide

http://www.cbn.org/news/stories/suicide.html

Information on Galileo

http://www.pd.astro.it/ars/arshtml/arstitle.html

Cryogenic Glossary

http://www.cs.ruu.nl/wais/html/na-dir/cryonics-faq/part9.html

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Learning Advice

You must remember the seriousness of the task you are undertaking. As an advisor, it is your job to wade through all of the available material and provide the President with precise and concise information.

Evaluation

You and your advisory team will be evaluated on the quality and the quantity of your written and oral reports. As it is your job to provide advice to the President, it is the quality of that advice that you will be assessed on the most.

Conclusion

Now that you have finished with the majority of your work, it is time for a little reflection. In addition to the previously mentioned activities, answer these questions.

1. What is your opinion regarding the new Scientific Revolution? Do we as a society have anything to fear from these new discoveries such as cloning and cryogenics?

2. Should there be any ethical guidelines regarding new scientific discoveries or should we just let science go unchecked and deal with the problems as they arise?

Teacher Notes

Grade Level 7th Grade - Scientific Revolution

Lesson Purpose

To expose students to the past scientific revolution and for students to apply what they have learned to modern situations and issues.

Standards

History-Social Science Grade 7: Students trace the historical developments of the Scientific Revolution and analyze its lasting effect on religious, political and cultural institutions. Students assess and formulate arguments about the reasons for change and continuity in societies from the medieval through the early modern era.

Language Arts Grade 7: Reading Comprehension Students read and understand grade-level-appropriate material to analyze text which uses cause and effect patterns. Writing Strategies: Students write clear, coherent, and focused essays [which cause them to] identify topics, ask and evaluate questions, and develop ideas leading to inquiry, investigation and research. Listening and Speaking: Students deliver focused, coherent presentations that convey ideas and relate to the audience by asking probing questions designed to elicit information, including evidence to support the listeners claims and conclusions.

Teachers

You may want to spend some time prior to the lesson working on the issue of Ethics, and their relationship with science, money, etc... By doing this you will allow students to become more active players in the scenario.

Length of Lesson

You should allow at least 2 weeks for this lesson to be completed. The lesson can be extended by including debates on the various issues to be discussed within the lesson.

Adaptations for Special Needs Students

You can either slow the lesson down or remove some of the components as you see fit. It may also be helpful to add other more famous scientists like Leonardo Da Vinci, as research topics in addition to those already suggested.

Credits

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